

$\frac{d\langle \sigma_{\alpha} \rangle}{dt} = -\frac{1}{\tau_{\alpha}} \langle \sigma_{\alpha} \rangle$ in each band. If $\tau_{\alpha} \gg \tau_{\beta}$, then $\langle \sigma_{\alpha} \rangle \approx 0$ and $\langle \sigma_{\beta} \rangle \approx \langle \sigma_{\beta} \rangle_0$.

$\frac{d\langle \sigma \rangle}{dt} = \frac{1}{N} \frac{d}{dt} \sum_i \sigma_i = \frac{1}{N} \sum_i \frac{d\sigma_i}{dt}$